

A Conversation on the Semantic Web and Legal Information

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CanLII

Annual Meeting Pre-Conference Workshop

CALL/ACBD Conference, May 24, 2014

Overview

- Introduction to what people mean when they talk about the semantic web*
- What it could mean for libraries and legal information
- Overview of some main topics
- Breakout discussion
- The future?

*Different people mean slightly different things

Disclaimers (1 of 2)

Depth and breadth, in three hours:

- we can't cover everything
- we can't cover anything too deeply

Disclaimers (2 of 2)

Definitions:

- What we will be talking about today may not always be strictly considered a part of the “semantic web”

(but we think it's all related and important)

But hopefully . . .

We will all:

- Be conversant on different technologies and opportunities in this area
- Understand possibilities for the future and how we can start exploring them
- Know a group of people who are also interested in exploring potential opportunities

Introductions

The Potential

A data centric way to navigate information

- Allows computers to navigate information more effectively:
 - By finding information without explicit links
 - Updating from remotely maintained services
 - Finding new patterns and meanings from diverse datasets

The opportunities

- Better and more reliable discovery tools (because they are based on controlled vocabularies, explicit links, and crosswalks)
- Better ability to create tools without having to maintain full datasets for each instance

The opportunities, cont.

Better leverage of the high value metadata libraries and publishers already create through:

- Linkages among vocabularies and standards
- Open availability for other uses

How it's happening

The Trend:

- Movement from record-centric view to data-centric view
- Breaking up silos of data into parts allows them to better interact with each other, within and across platforms
- Opening of data services for other applications

But what does it mean?

- Ability to aggregate data from multiple sources
 - new applications (web and otherwise)
 - mashups
 - analytics
- Ability to use data without having to maintain it
 - this has the potential to remove the requirement that an organization be a certain size before it can do big things

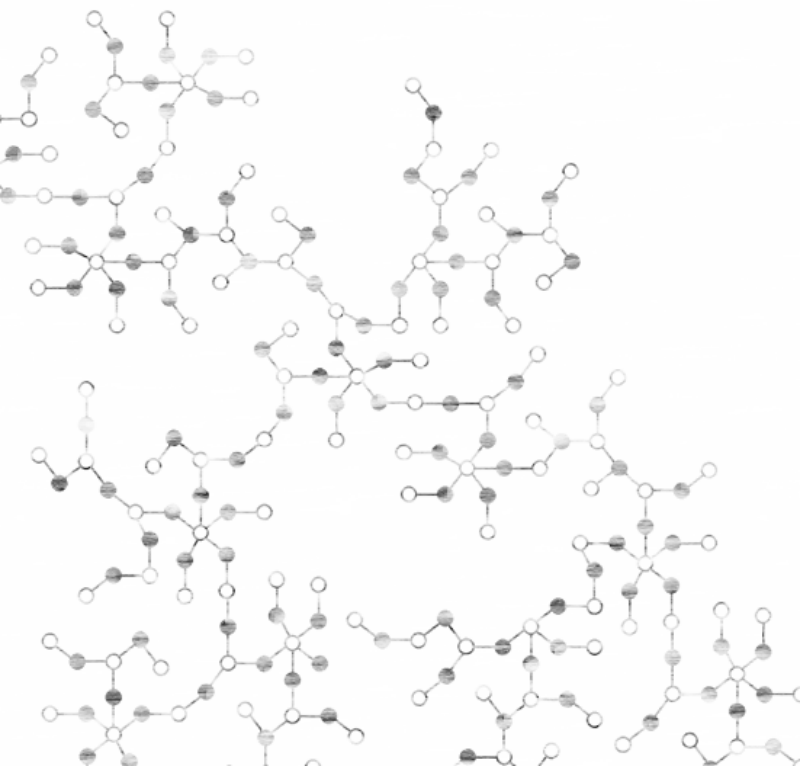
The Semantic Web

Introducing the Semantic Web

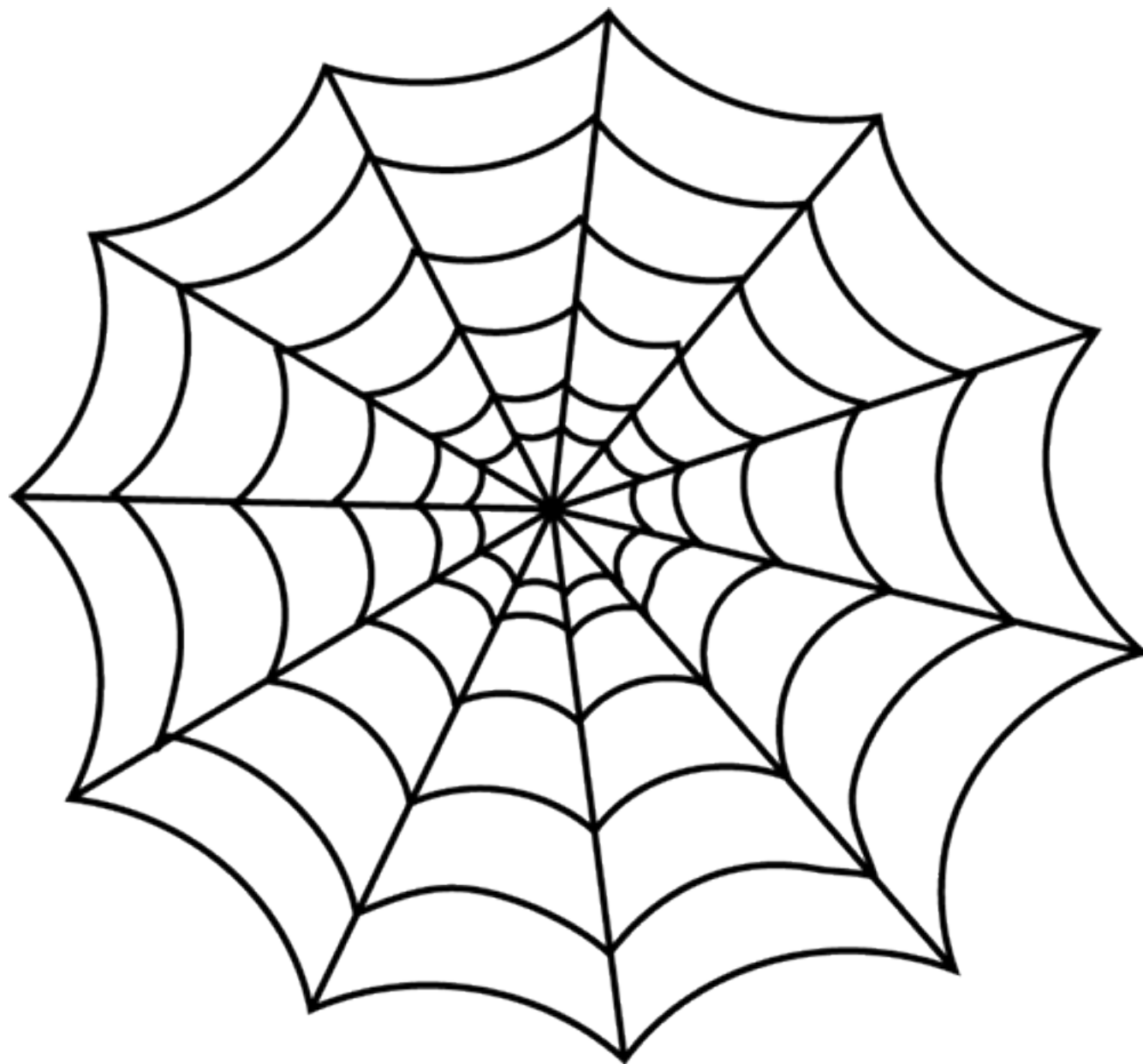
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Canadian Association of Law Libraries/
L'Association canadienne des bibliothèques de droit
May 24th, 2014 in Winnipeg, Manitoba



Semantic Web?



Semantic Web?

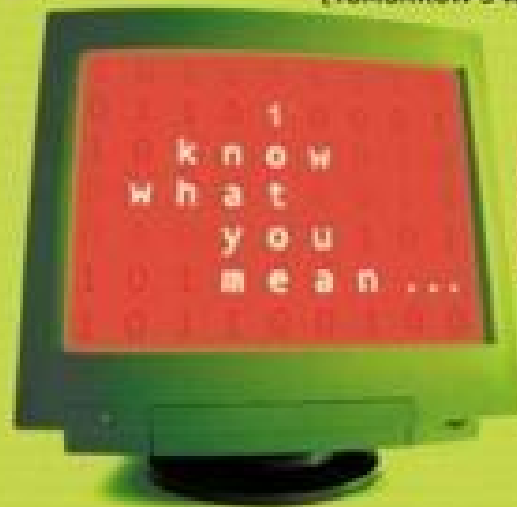
EXCLUSIVE: WARP DRIVE UNDERWATER • ARCTIC OIL VS. WILDLIFE

SCIENTIFIC AMERICAN

MAY 2000
\$4.95

Get the Idea?

(TOMORROW'S WEB WILL)



PLUS:

Antibiotics:
Dim Future

Rarechach:
A Waste of Ink
The Oldest Stars

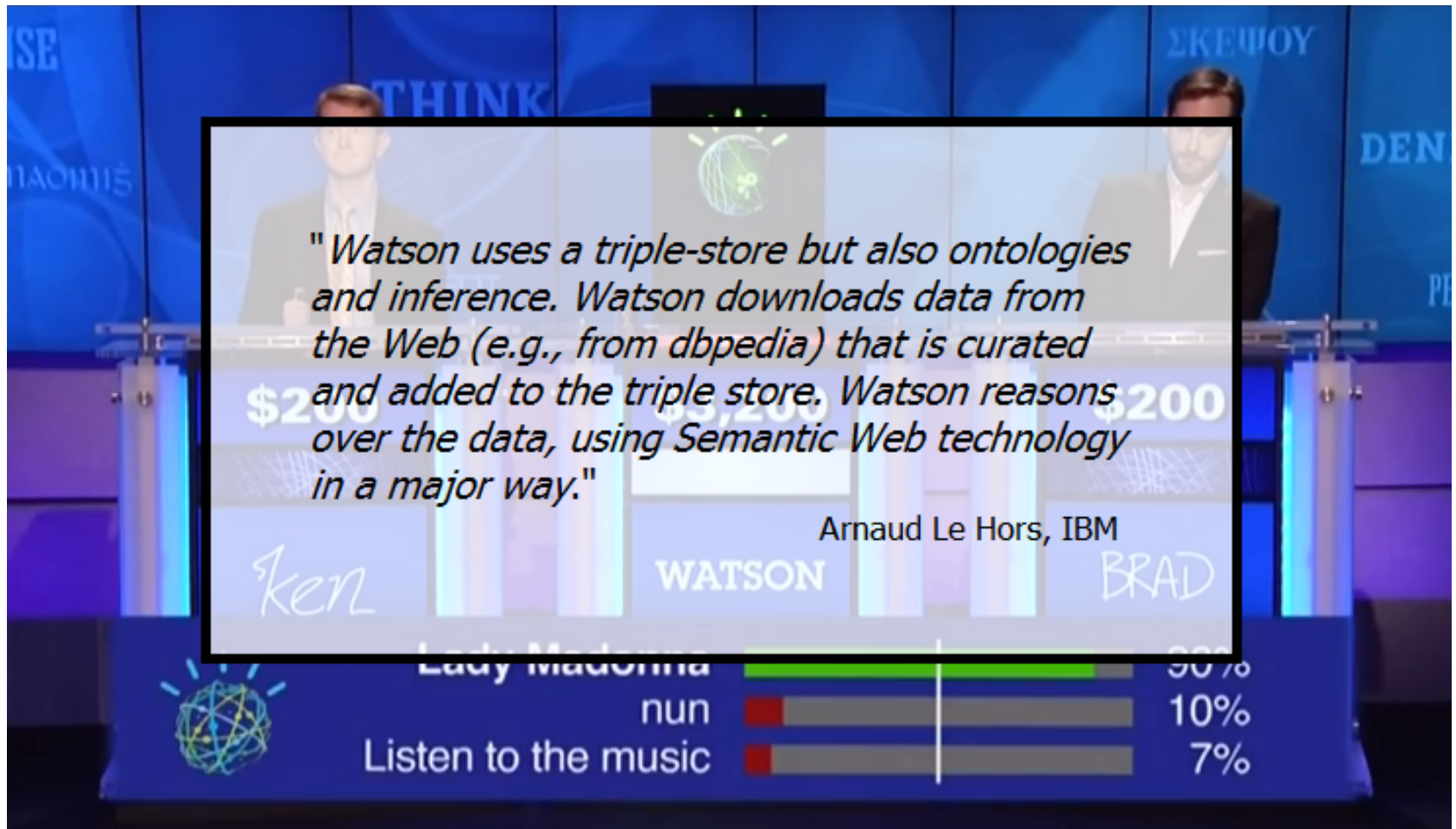
Copyright © 2000 Scientific American, Inc.



Nebraska Oddfish. 2013. I could be your light in the dark... <<http://www.flickr.com/photos/ditadata/9167721224/>>



Chase Rocker. 2011. Jeopardy - Watson vs. The Humans - Day 1[excerpt] <<http://www.youtube.com/watch?v=yJptrlCVDHI>>



“The Semantic Web is ... an extension of the current one in which information is given well-defined meaning, better enabling computers and people to work in cooperation.”

Tim Berners-Lee and others, “The Semantic Web,” Scientific American, May 2001, p. 37

“It isn't the cables, it is the computers which are interesting.”

“It isn't the computers, but the documents which are interesting.”

“It's not the documents, it is the things they are about which are important.”

Tim Berners-Lee, “Giant Global Graph” <<http://dig.csail.mit.edu/breadcrumbs/node/215>>

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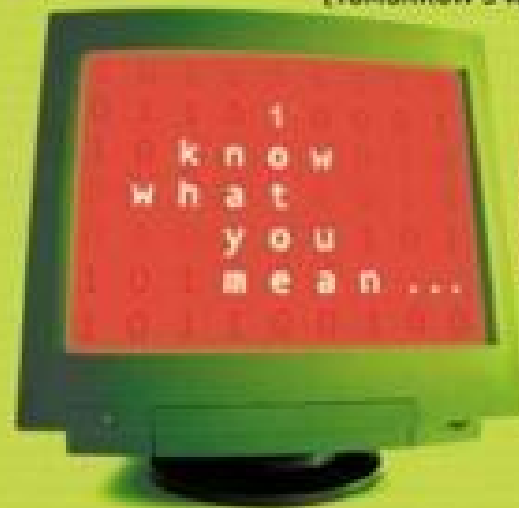
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PLUS

Antibiotics:
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A Waste of Ink
The Oldest Stars

Copyright 2000 Scientific American, Inc.

“Mom needs to see a specialist and then has to have a series of physical therapy sessions. Biweekly or something. I’m going to have my agent set up the appointments.”

Tim Berners-Lee and others, “The Semantic Web,” Scientific American, May 2001, p. 36

Semantic Web Agent Scenario

- Retrieves information about her prescribed treatment from the doctor's agent
- Provides a list of several providers covered by medical insurance rated excellent or very good within 20 miles of home
- Calculates possible appointment times using Peter's and Lucy's scheduled availability
- Agent presents a plan

Semantic Web Agent Scenario

- Pete sets agent to redo the searcher with improved parameters
- Lucy's agent trusts Pete's agent and assists providing access certificates and data already sorted through
- Calculates new appointment times with warnings
 - Pete needs to reschedule less important meetings
 - Provider not listed under physical therapists but verified by other means
 - Option to view details is provided

“The Semantic Web will bring structure to the meaningful content of Web pages, creating an environment where software agents roaming from page to page can readily carry out sophisticated tasks for users.”

Tim Berners-Lee and others, “The Semantic Web,” Scientific American, May 2001, p. 37

**Implications for legal
information?**

Implications for publishing

- Potential for dual streams for content and platform
- Less of a requirement for minimum size and costly primary legal content before publishers can participate
- Better integration of different publishing streams (print, electronic, and platforms)

Primary law in a semantic environment

- Primary law
 - changes often
 - privacy, e.g. caselaw - the semantic web could end caselaw's status of being public but obscure
 - several projects in this area, especially in US regulatory data

Subject description for legal information

- Subject access
 - no open taxonomy suitable for caselaw level description
 - lack of navigability among publishers' platforms for secondary material
 - Several datasets available, but generally part of bigger, general projects like Library of Congress' classification and subject headings

Intersection with Libraries

Implications for libraries

- Better integration of content from different publishers means better leverage of collection budget through improved discoverability
- Potential separation of acquisition of content and platform
 - Including ability to create local applications using external content
 - And ability to include local content in vendor supplied platforms

A world without print?

Not the future I foresee -- (maybe for some libraries)

- The semantic web handles the description of physical objects as well as digital entities
 - so no conceptual gap between physical and digital items
- Better tools to navigate the digital don't negate the usefulness of the analog

Semantic Web: Intersection With Libraries

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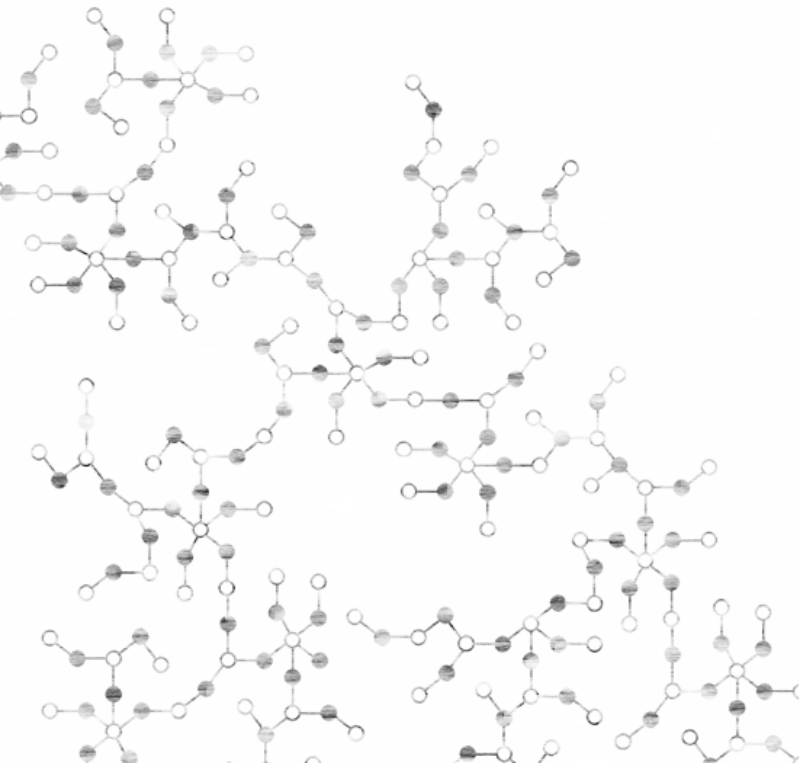
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What is RDA?

- Successor to the **Anglo-American Cataloguing Rules** (AACR2)
- Aligned with the **Statement of International Cataloguing Principles** (2009)

“Several principles direct the construction of cataloguing codes. The highest is the convenience of the user.”

http://www.ifla.org/files/cataloguing/icp/icp_2009-en.pdf

What is RDA?

- A 'content standard' that describes resources
- Based on these conceptual models
 - **Functional Requirements for Bibliographic Records (FRBR)**
 - **Functional Requirements for Authority Data (FRAD)**

Introduction to FRBR

- In 1998 **International Federation of Library Associations** (IFLA) released Final report
- In 2007 **RDA** adopted this conceptual model and reorganized draft text

Introduction to FRBR

The aim of FRBR was to,

*"... produce a framework that would provide a clear, precisely stated, and commonly shared understanding of what it is that the bibliographic record aims to provide information about, and what it is that we expect the record to achieve in terms of **answering user needs.**"*

Functional Requirements for Bibliographic Records: Final Report

To Support Resource Discovery

- RDA is a set of guidelines and instructions on **formulating data to support resource discovery**. -- RDA 0.0
- *"The purpose of recording data is to support the user tasks."* -- Chris Oliver, *Introducing RDA*

The FRBR User Tasks

- **Find** – to find entities corresponding to the users search criteria
- **Identify** – to confirm that the entity sought is the same as the entity described
- **Select** – to select an entity appropriate to the needs of the user
- **Obtain** – to acquire or gain access to the entity

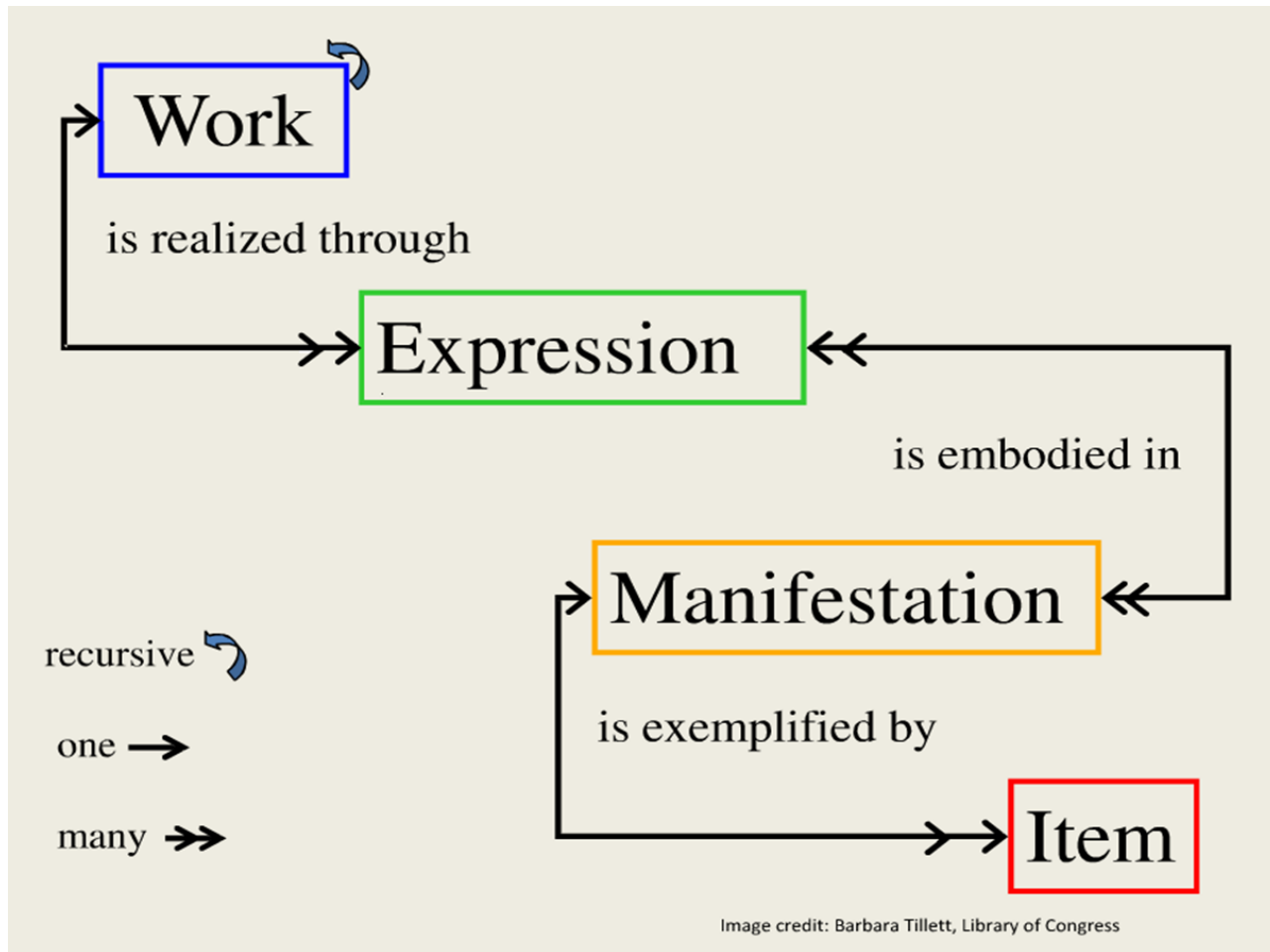
The Entity-Relationship Model

- The three components of an entity-relationship data model
 - **Entities** – the things that users are interested in: resources; people; subjects
 - **Attributes** – the characteristics of these things
 - **Relationships** – relationships between these things

The FRBR Entities

- **Group 1** – entities that are the results of intellectual or artistic effort:
 - **Work; Expression; Manifestation; Item**
- **Group 2** – entities responsible for intellectual or artistic work:
 - **Person; Corporate Body; Family**
- **Group 3** – entities that are subjects of intellectual or artistic work:
 - **Concept; Object; Event; Place**

FRBR Group 1 Entities



RDA and FRBR

"The RDA and FRBR efforts have been one of the key contributions in re-focusing cataloging efforts from 'strings to things' and in providing a set of base line functional requirements for supporting the future of cataloging. The holistic approach to retrieval and access as defined by the FRBR work has been a guiding principal to the model proposed in this document."

Library of Congress. 2012. Bibliographic Framework as a Web of Data: Linked Data Model and Supporting Services , p. 37

<<http://www.loc.gov/bibframe/pdf/marclid-report-11-21-2012.pdf>>

Our Friend MARC

LC Control No.: 78005880

LCCN Permalink: <http://lccn.loc.gov/78005880>

000 00914pam a2200277 i 450

001 3681622

005 19781228000000.0

008 780322s1978 nyu b 001 0 eng

035 __ |9 (DLC) 78005880

906 __ |a 7 |b cbc |c orignew |d 1 |e ocip |f 19 |g y-gencatlg

010 __ |a 78005880

020 __ |a [0698307011](#)

040 __ |a DLC |c DLC |d DLC

043 __ |a n-us---

050 00 |a KF9725 |b .S74

082 00 |a 345/.73/077

100 1_ |a Stevens, Leonard A.

245 10 |a Death penalty : |b the case of life vs. death in the United States / |c by Leonard A. Stevens ; foreword by Michael Meltsner.

260 __ |a New York : |b Coward, McCann & Geoghegan, |c c1978.

300 __ |a 159 p. ; |c 24 cm.

490 0_ |a Great constitutional issues

504 __ |a Bibliography: p. 154-155.

500 __ |a Includes index.

650 _0 |a Capital punishment |z United States.

600 10 |a Furman, William Henry.

991 __ |b c-LL |h KF9725 |i .S74 |t Copy 1 |w BOOKS

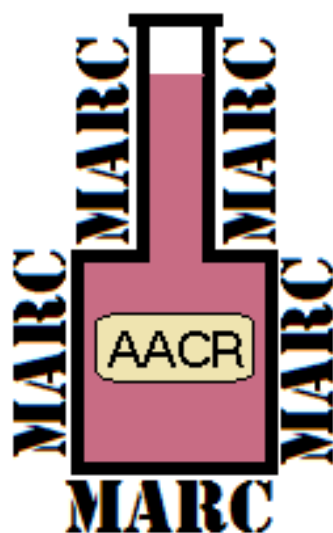
CALL NUMBER: [KF9725 .S74](#)

Copy 1

Our Friend MARC

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eng 9(DLC) 78005880 a7bcbccorignewdleocipf19gy-gencatlg
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us---00aKF9725b.S7400a345/.73/0771 aStevens, Leonard A.10aDeath
penalty :bthe case of life vs. death in the United States /cby
Leonard A. Stevens ; foreword by Michael Meltsner. aNew York
:bCoward, McCann & Geoghegan,cc1978. a159 p. ;c24 cm.0 aGreat
constitutional issues aBibliography: p. 154-155. aIncludes
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Henry. bc-LLhKF9725i.S74tCopy 1wBOOKS

New Wine in an Old Bottle



The BIBFRAME Initiative

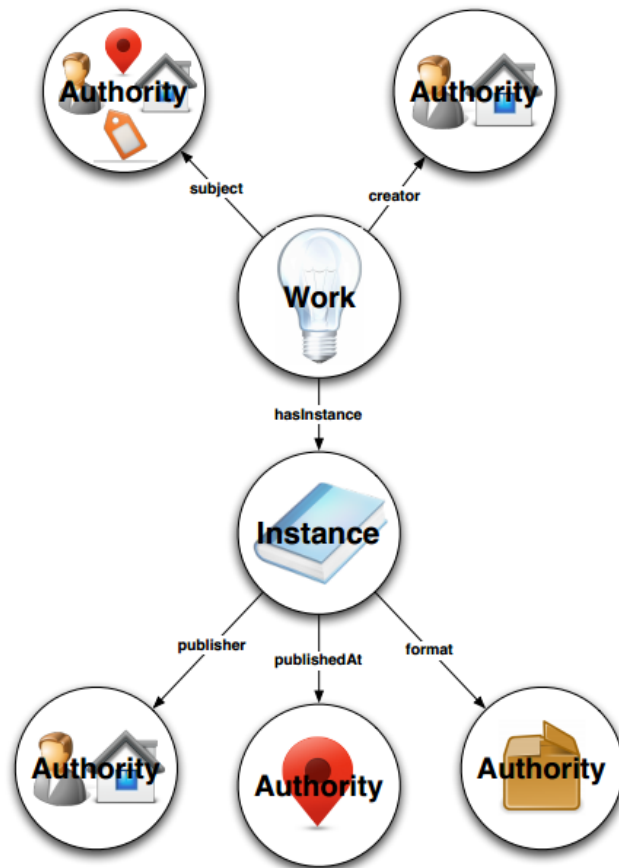
“[BIBFRAME] is the foundation for the future of bibliographic description that happens on, in, and as part of the web and the networked world we live in. It is designed to integrate with and engage in the wider information community while also serving the very specific needs of ... libraries and similar memory organizations.”

“It isn't the records, it is the networks that connect them which are interesting.”

The BIBFRAME Initiative

“The BIBFRAME model is intentionally designed to coordinate the cataloging and metadata that libraries create with these efforts, and connect with them. In short, the BIBFRAME model is the library community’s formal entry point for becoming part of a much larger web of data.”

BIBFRAME Approach



- Work
- Instance
- Authority
- Annotation

Figure 1: A graphical representation of the BIBFRAME Linked Data model defining the relation between Work and Instance resources and their contextualization to Web addressable Authority resources.

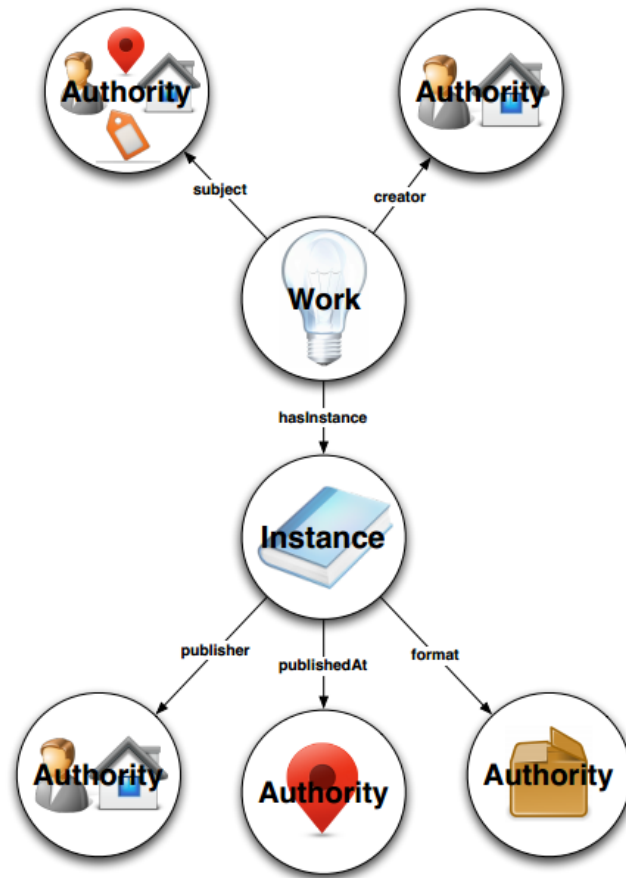
Creative Work



Instance



Authority



Annotations

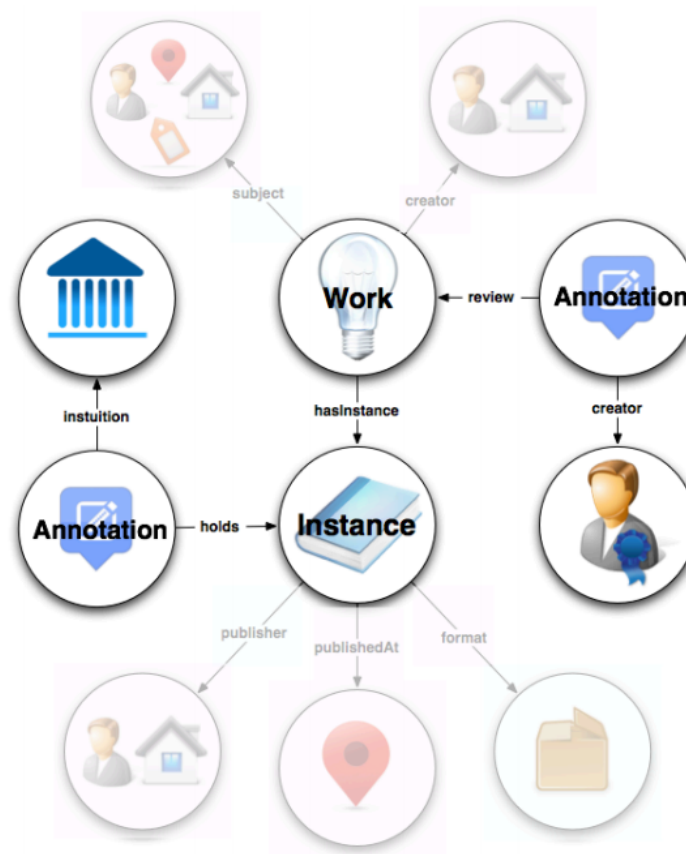



Figure 2: A graphical representation of the BIBFRAME Linked Data model in the context of a flexible annotation framework.

Linked Classification

 LIBRARY OF CONGRESS

ASK A LIBRARIAN

DIGITAL COLLECTIONS

LIBRARY CATALOGS

Search GO

The Library of Congress > [Linked Data Service](#) > [LC Classification](#)

BETA

Library of Congress Classification: Class K

From [Library of Congress Classification](#)

Details Visualization

Library of Congress Classification: Class K

K -- LAW

URI(s)

- > <http://id.loc.gov/authorities/classification/K>

Instance Of

- > [MADS/RDF MADSCollection](#)
- > [SKOS Collection](#)


Scheme Membership(s)

- > [Library of Congress Classification](#)

Collection Members

- > [America, North America](#)
- > [History of canon law](#)
- > [Islamic law, Sharī'ah, Fiqh, شريعة فقه](#)
- > [Jewish law, Halakhah, הלכה](#)
- > [Law in general, Comparative and uniform law, Jurisprudence](#)
- > [Law of the Roman Catholic Church, The Holy See](#)
- > [Religious law in general, Comparative religious law, Jurisprudence](#)
- > [Law of the United Kingdom and Ireland](#)
- > [Law of Canada](#)
- > [Law of the United States](#)
- > [Latin America, Mexico and Central America, West Indies](#)
- > [South America](#)

Linked Classification

 LIBRARY OF CONGRESS

ASK A LIBRARIAN

DIGITAL COLLECTIONS

LIBRARY CATALOGS

Search

The Library of Congress > [Linked Data Service](#) > [LC Classification](#)

BETA

Law--United States (General)--Courts. Procedure--Civil procedure--Trial--Evidence

General

From [Library of Congress Classification](#)

Details

Visualization

Law

United States (General)

Courts. Procedure

Civil procedure

Trial

Evidence

General

URI(s)

> <http://id.loc.gov/authorities/classification/KF8931-KF8935>


Instance Of


> [LCC ClassNumber](#)


> [LCC Range](#)


Components


> Law


> United States (General) 

> Courts. Procedure 

> Civil procedure 

> Trial 

> Evidence 

> General 

Scheme Membership(s)

> [Library of Congress Classification](#)

Collection Membership(s)

> <http://id.loc.gov/authorities/classification/K>

Codes

> KF8931-KF8935

Linked Classification

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  </madsrdf:Topic>
  <madsrdf:Topic>
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Some Main Topics

Open data

The idea that data should be:

- Freely available
- Free to use
- License / copyright free

Often scientific and government data, used for analysis, visualization, better communication, and other purposes.

Sources of open data



Government data portals:

- Data.gc.ca ([Federal gov't data](#))
- Municipal ([Vancouver](#) / [Toronto](#))
- Provincial ([British Columbia](#) / [Alberta](#))

Other government:

- Queen's Printer, BC ([Open legislation](#))
- [National Institute of Health Repository](#)
- Universities

Example of data source :



[About data.gc.ca](#) ▾ [Open Data](#) ▾ [Open Government](#) ▾ [Participate](#) ▾ [Login](#)

[Home](#) > [Open Data](#) > [Search Data](#)

[Share this page](#)

Consolidated Acts and regulations in XML

The Consolidated Acts and Regulations in XML is a list of federal Acts and regulations with information on each legislative instrument's consolidation date and a link to its full text in XML and HTML formats.

Licence:
[Open Government Licence - Canada](#)

Dataset Resources

Resource Name	Format	Language	Link
Consolidated Statutes and regulations in XML	XML	Bilingual (English and French)	Download
Data dictionary	HTML	English	Download
Data dictionary	HTML	French	Download

Developer Tools

The information on this page (the dataset metadata) is also available in JSON format
[Link to JSON format](#)


Have your say

★★★★★

Rate this dataset

0 Comment(s)

About this Dataset

 [RSS Feed](#)

Publisher:
Department of Justice

Tags:
[Law](#) [Regulations](#) [Consolidation](#)

Subject:
[Law](#)

Date Published: 2013-10-01

Date Modified: 2013-10-01

Homepage URL: [Program Page](#)

Frequency: Fortnightly

Openness rating: ★★★★★

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</Text>
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  </ul>

```

Some more datasets:

- Revenue Canada - [Corporate tax information](#) ([the CSV file](#))
- Elections Canada - [Poll Results](#)
- Corrections Canada - [Offender Profiles](#)
- And . . . ?

Formats

- CSV
- XML
- JSON
- Other
- Static formats like PDF are not considered open data.
- Proprietary formats like Excel are also not best practices for publishing open data.
- Different data formats are better for different use cases.

Regular expressions

- Give the ability to edit large datasets in aggregate, so unusable formats can be converted into usable formats.

Example of a MARCXML catalogue export.

So what can we do with it?

- In depth data analysis of government data
- Build applications leveraging a taxpayer funded resource
- Compile data from multiple sources to make something new
 - Visualizations to convey meaning
 - Novel ways to navigate patterns
 - What do you want to do with it?

An Introduction to Linked Data

F. Tim Knight

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York University

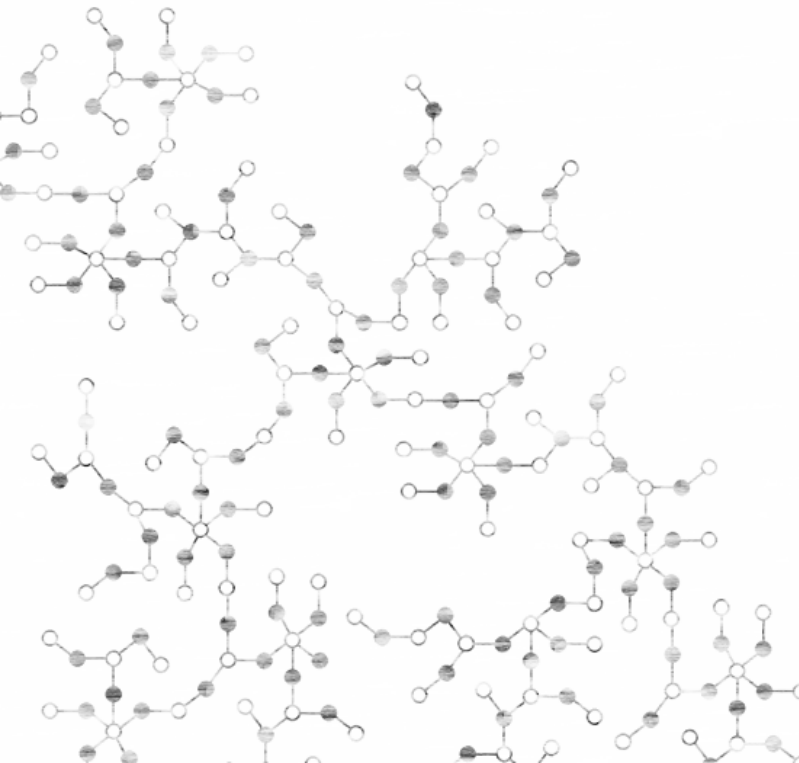
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Outline:

Review of linked data theory and principles

Growth of the linked data cloud

Linked data and legal resources

Role for organizations like CANLII

Linked data?



Subject



Subject

Object



Subject



Object



Predicate



Subject



Object



Relationship

Triple



Triple



Case *has a* Citation

Triple



Case *has a* Citation

Court *has a* Name

Triple



Case *has a* Citation

Court *has a* Name

Resource *has a* Format

COURT OF APPEAL FOR ONTARIO

CITATION: Royal Bank of Canada v. King, 2013 ONCA 524

DATE: 20130822

DOCKET: C57108

Blair, Watt and Pepall JJ.A.

BETWEEN

Royal Bank of Canada

Plaintiff (Respondent)

and

Leslie King

Defendant (Appellant)

Leslie King in person

Amanda Jackson for the respondent

Heard: August 19, 2013

On appeal from the judgment of Justice J.A. Ramsay of the Superior Court of Justice, dated May 23, 2013.

APPEAL BOOK ENDORSEMENT

[1] Mr. King owed the Royal Bank approximately \$275,000 on a mortgage loan, a line of credit and various credit card accounts. He does not dispute this. He defaulted. The Bank took steps to collect and obtained summary judgment.

[2] Mr. King appeals, arguing there are genuine issues for trial. We do not agree. His principal argument is that he paid the Bank. He did not. What he did was present an instrument to the Bank purporting to be payable to Royal Bank of Canada in the amount of \$275,000 and drawn on an account with Bank of Montreal in which he admits he had no funds. The fact that Royal Bank mistakenly credited his loan accounts with the monies – including the account containing the \$777.56 credit upon which Mr. King relies – before it learned that the instrument had been dishonoured is not material. Nor do the various provisions of the Canadian Payments Association Rule, which apply as between banks, assist him.

[3] He has not paid. There is no genuine issue for trial and the motion judge properly granted summary judgment, in our view.

[4] The appeal is therefore dismissed. The respondent is entitled to its costs of the appeal and of the stay motion fixed in the total amount of \$10,000 including disbursements and GST.

COURT OF APPEAL FOR ONTARIO

CITATION: Royal Bank of Canada v. King, 2013 ONCA 524

DATE: 20130822

DOCKET: C57108

Blair, Watt and Pepall JJ.A.

Case A *has docket number* C57108

BETWEEN

Royal Bank of Canada

Plaintiff (Respondent)

and

Leslie King

Defendant (Appellant)

Leslie King in person

Amanda Jackson for the respondent

Heard: August 19, 2013

On appeal from the judgment of Justice J.A. Ramsay of the Superior Court of Justice, dated May 23, 2013.

APPEAL BOOK ENDORSEMENT

[1] Mr. King owed the Royal Bank approximately \$275,000 on a mortgage loan, a line of credit and various credit card accounts. He does not dispute this. He defaulted. The Bank took steps to collect and obtained summary judgment.

[2] Mr. King appeals, arguing there are genuine issues for trial. We do not agree. His principal argument is that he paid the Bank. He did not. What he did was present an instrument to the Bank purporting to be payable to Royal Bank of Canada in the amount of \$275,000 and drawn on an account with Bank of Montreal in which he admits he had no funds. The fact that Royal Bank mistakenly credited his loan accounts with the monies – including the account containing the \$777.56 credit upon which Mr. King relies – before it learned that the instrument had been dishonoured is not material. Nor do the various provisions of the Canadian Payments Association Rule, which apply as between banks, assist him.

[3] He has not paid. There is no genuine issue for trial and the motion judge properly granted summary judgment, in our view.

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Case A *has plaintiff* Royal Bank of Canada

Case A *has defendant* Leslie King

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Primary Key	Property	Value
Case A	Docket number	C57108
Case A	Plaintiff	Royal Bank of Canada
Case A	Defendant	Leslie King
Case A	Heard in	Court of Appeal for Ontario

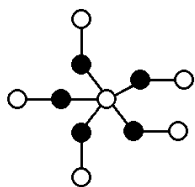
Case A	Docket number	C57108
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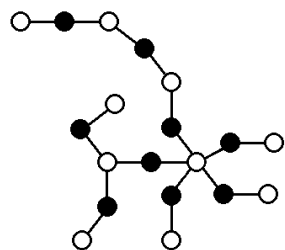
Case A	Plaintiff	Royal Bank of Canada
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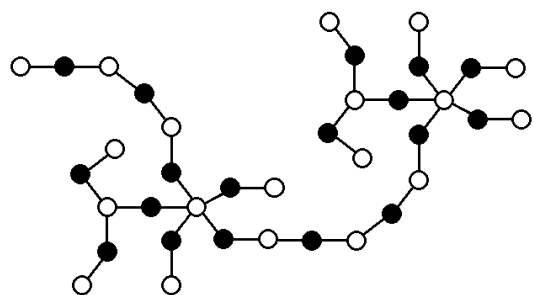
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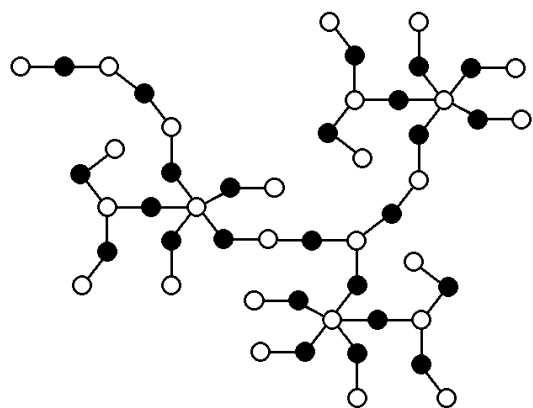
Case A	Heard in	Court of Appeal for Ontario
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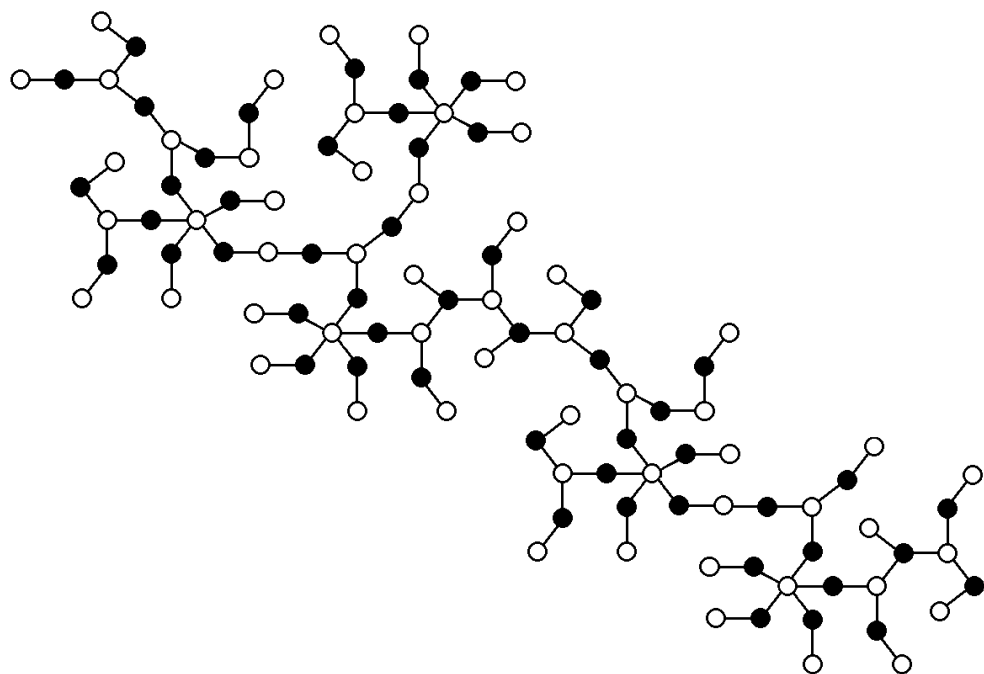


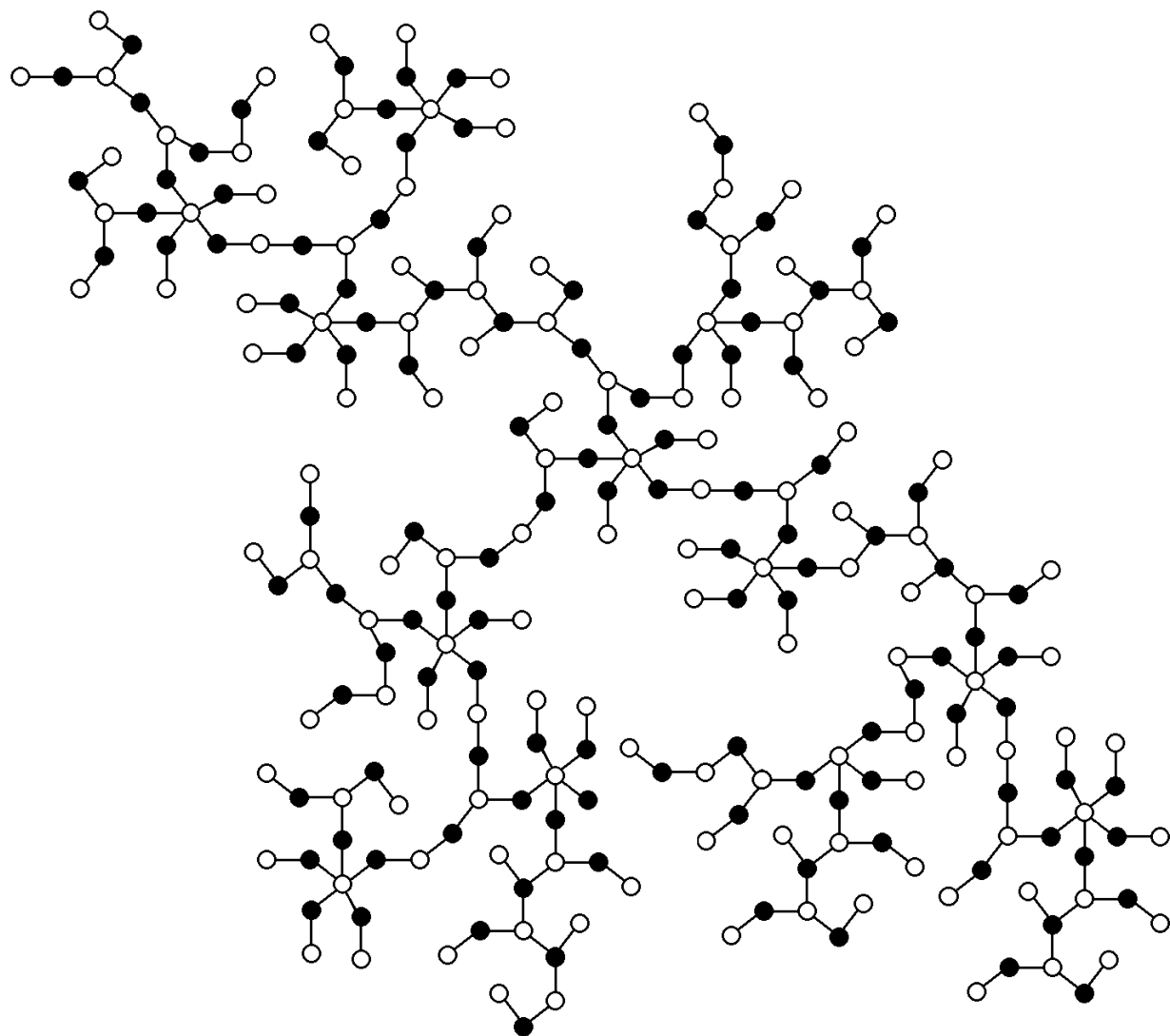














Construction site scaffolding / Magnus Franklin <<https://www.flickr.com/photos/adjoined/1636521574/in/set-72157602526317228/>>

“... associative indexing, the basic idea of which is a provision whereby any item may be caused at will to select immediately and automatically another. This is the essential feature of the memex. The process of tying two items together is the important thing.” — Vannevar Bush

*“... associative indexing, the basic idea of which is a provision whereby any **resource** may be caused at will to select immediately and automatically another. This is the essential feature of **linked data**. The process of tying two items together is the important thing.”*


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<http://canlii.ca/t/g0656> *has title* Royal Bank of Canada vs. King

<http://canlii.ca/t/g0656> *has date* 2013-08-22

Principles of Linked Data

1. Use URIs as names for things
2. Use HTTP URIs so that people can look up those names
3. When someone looks up a URI, provide useful information, using the standards (RDF*, SPARQL)
4. Include links to other URIs, so that they can discover more things

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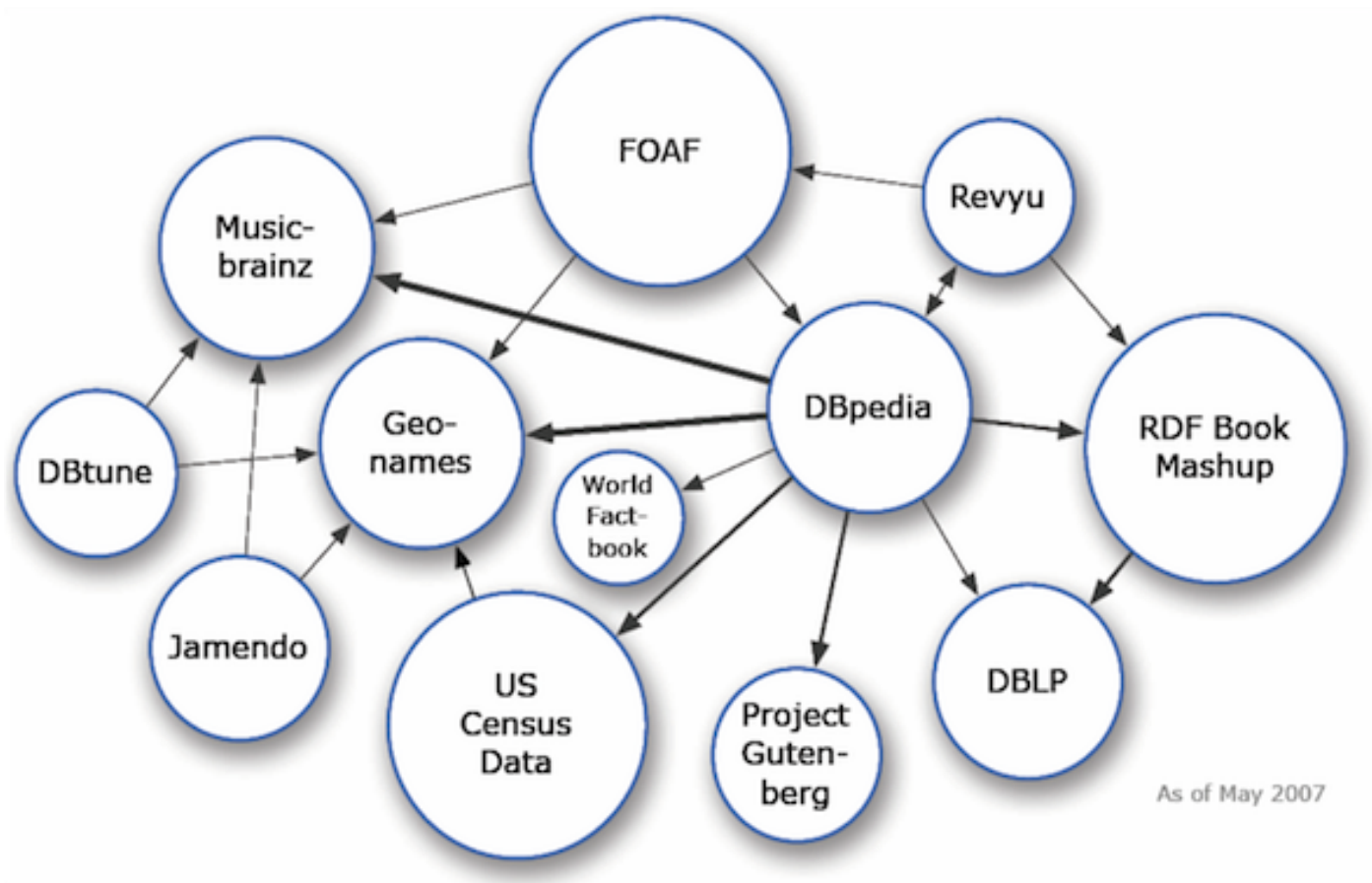
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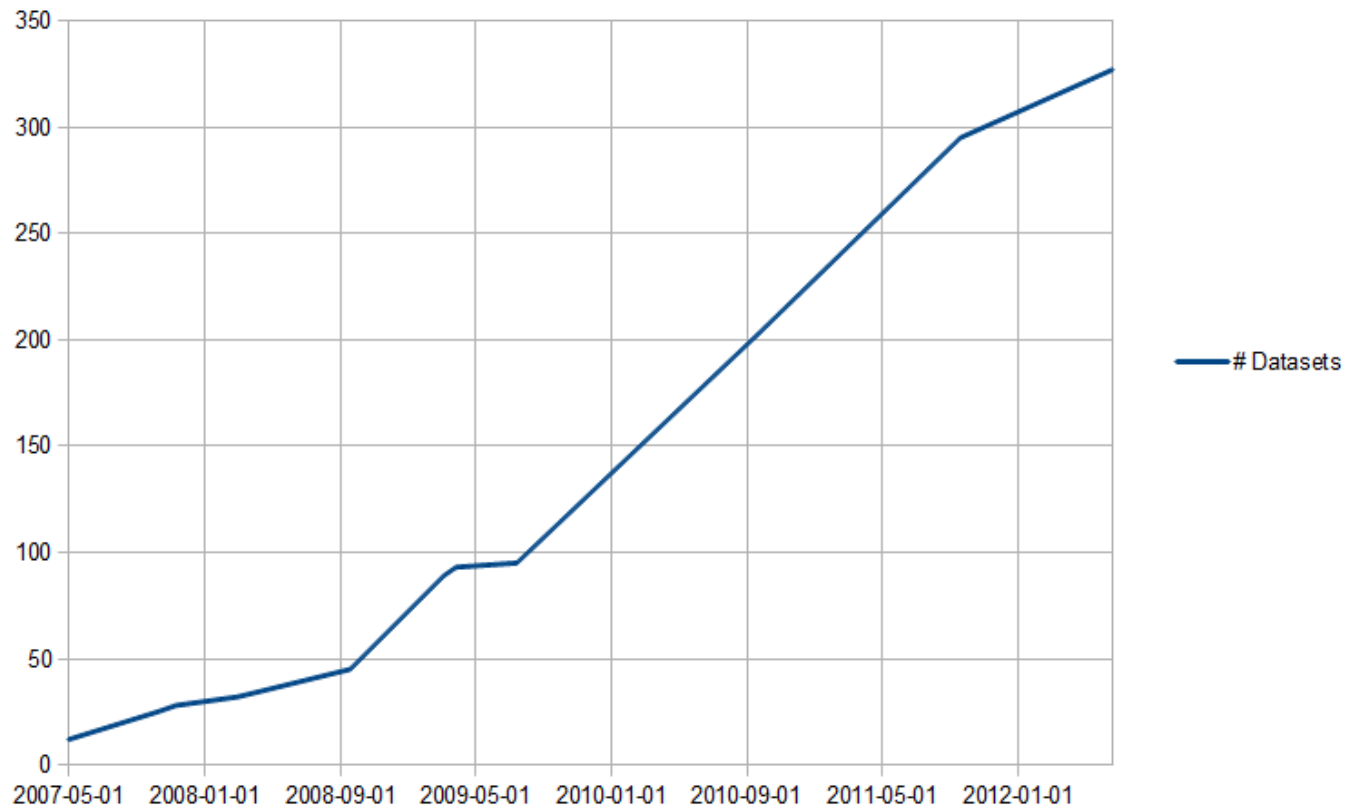
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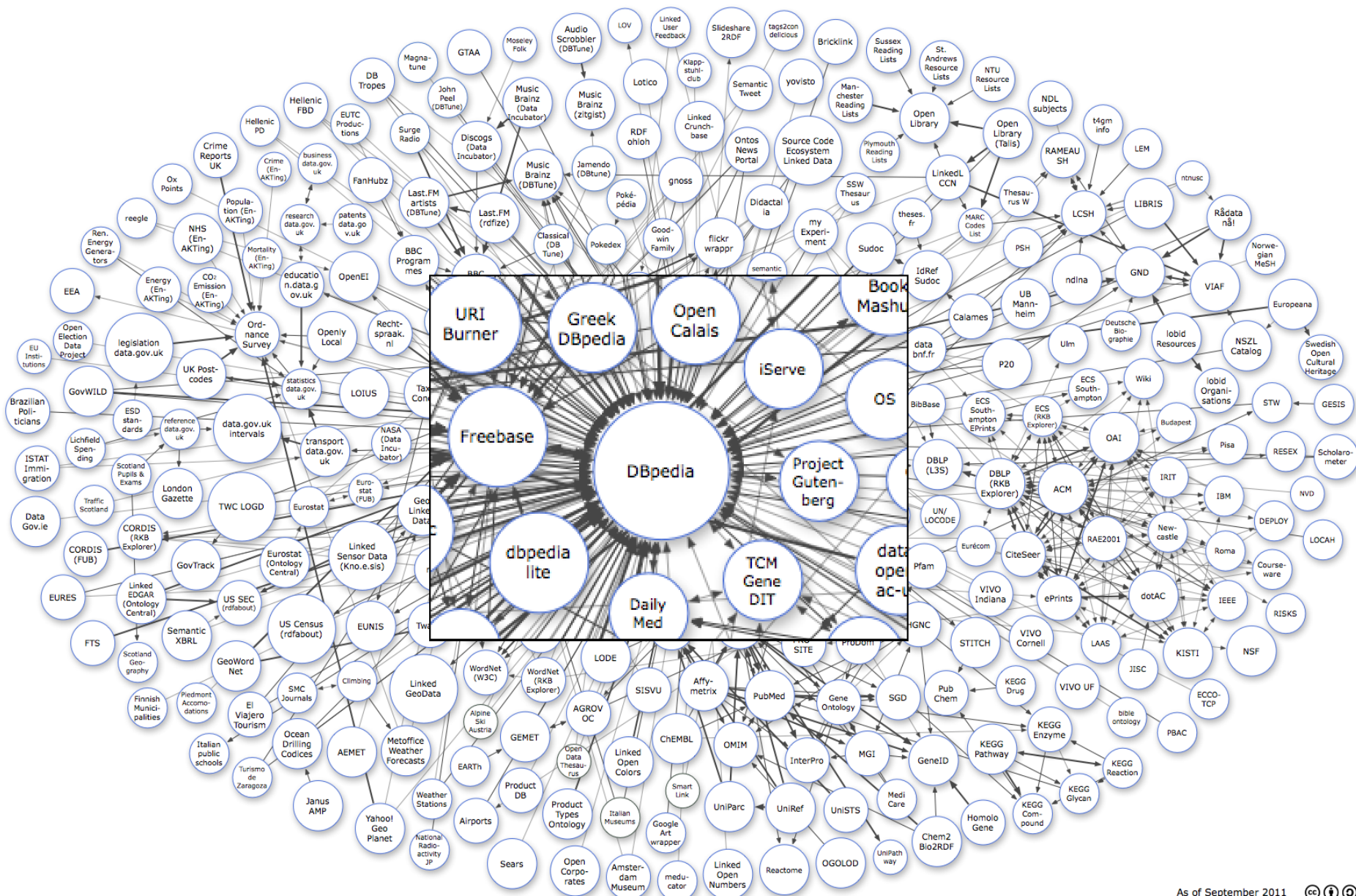
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LOD Cloud Growth (2007-2012)



Based on data provided for the LOD Cloud diagram at <<http://richard.cyganiak.de/2007/10/ld/>>



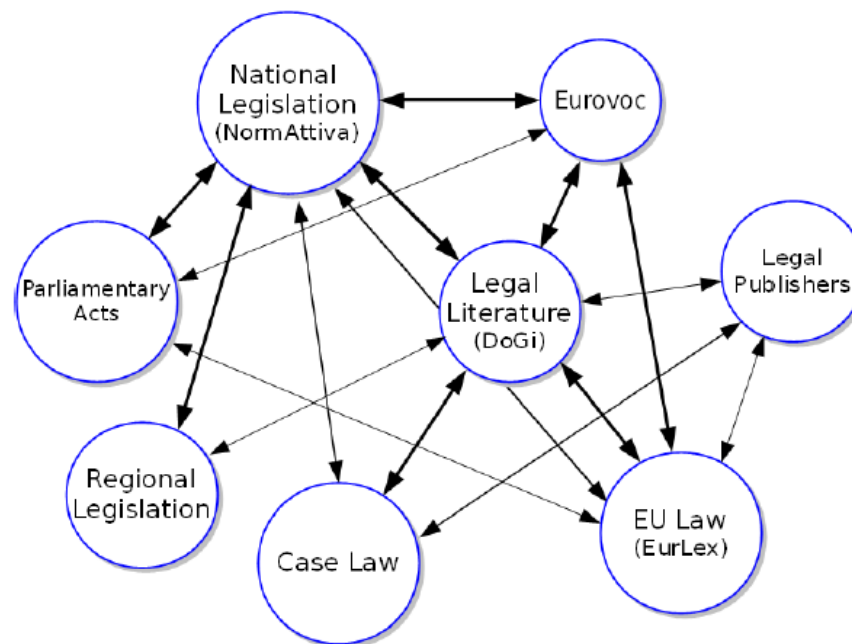


Fig. 1. A possible interconnection of relevant Legal Datasets in a “Legal Data Cloud”.

“Law is chaos with an index.”

“Publishing and using juridical information is challenging in many ways. It is produced by different parties, such as governmental bureaus, ministries, different levels of courts, research organizations, and media. The content is heterogeneous and produced using differing tools, data formats, and practices. The links between documents are often informal and/or not made explicit. The law in general is a dynamic, changing entity: for example, it is important to be able to refer to different versions of a law at different points of time. These challenges can be addressed through the use of linked data techniques.”

“The traditional fields and practices of law are changing fast. Legal drafting, private contracting, judicial sentencing and administrative management have been enlarged with online dispute resolution initiatives and new forms of self-regulation and access to justice. Citizens, customers and consumers require a greater participation and faster and more effective ways of facing their legal activities.”

A word cloud centered around the word "LAW". The words are arranged in a circular pattern around the central word. The words include: "information", "points", "dynamic", "bureaus", "changing", "entity", "content", "practices", "juridical", "cours", "important", "governmental", "media", "documents", "versions", "different", "parties", "research", "tools", "data", "organizations", "heterogeneous", "formats", "ministries", and "challenging". The words are in various colors (brown, green, blue, yellow) and orientations (horizontal, vertical, diagonal).

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LAW

URN:Lex

A Uniform Resource Name (URN) Namespace for Sources of Law (LEX)

“The purpose of the "lex" namespace is to assign an unequivocal identifier, in standard format, to documents that are sources of law. The identifier is conceived so that its construction depends only on the characteristics of the document itself and is, therefore, independent from the document's on-line availability, its physical location, and access mode.”

Metadata for Legal Resources

CEN MetaLex: Open XML Interchange Format for Legal and Legislative Resources

<<http://www.metalex.eu/>>

CitationStylist: For the Laws and Languages of the World

<<http://citationstylist.org/>>

Legal XML

<<http://www.legalxml.org/>>

LII Modeling Legislative Information

<<http://blog.law.cornell.edu/metasausage/downloads-and-related-information/>>

OAI4Courts

<<http://oai4courts.wikispaces.com/>>

Metadata Resources: Legal (Selected)

<<http://www.personal.psu.edu/rcr5122/Metadata.html>>

Types and Roles of Legal Ontologies

- Organize and structure information
- Reasoning and problem solving
- Semantic indexing and search
- Semantics integration and interoperation
- Understanding the domain

Ontologies for Legal Resources

LEX Ontology

<<https://code.google.com/p/lex-ontology/>>

LKIF Core Ontology

<http://www.estrellaproject.org/?page_id=3>

Valente, Andre. Types and Roles of Legal Ontologies

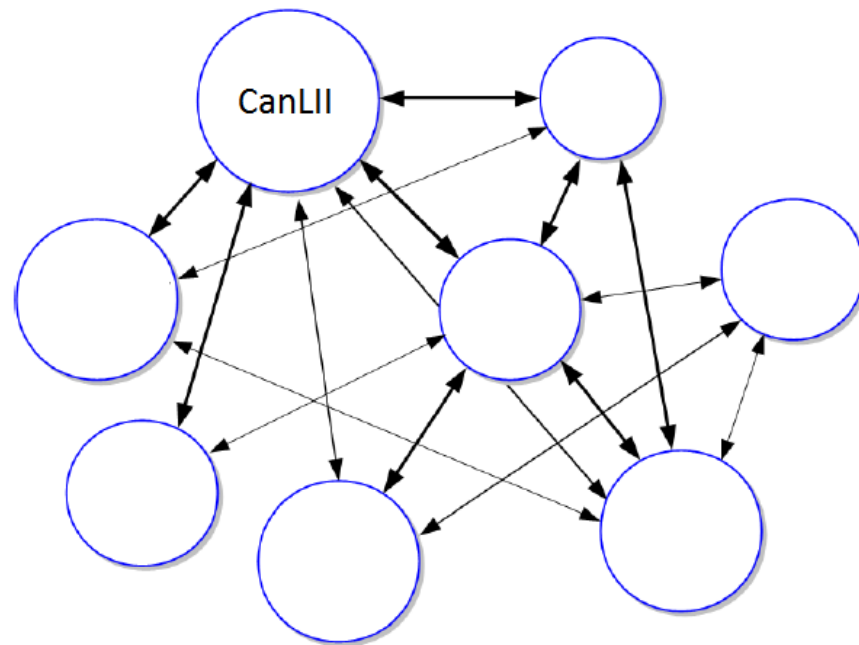
<<http://www.legalxml.org/>>

“The important thing about data is the more things you have to connect together the more powerful it is.”—Tim Berners-Lee

Raw
Data
Now!

TED





APIs

Application **P**rogramming **I**nterface

The working definition I use to explain it:

A way for computers to search a database instead of the user interface / search bar, which allows humans to search the database.



APIs

- Allow a remote service to make a call and get formatted data back
- Used to integrate data into an application or website
- Use HTTP protocols to call information, which is often returned in XML or JSON format
- This can be used to integrate dynamic content

APIs

- Generally require a user key to access
- Often have limits on use, with different licenses for different access

What do you get, what can you build?

It depends:

CanLII returns content in JSON format (<http://developer.canlii.org/io-docs>)

And many different things:

We built [CanLII Connects](#)

What APIs are already available in law?

- [Canlii](#)
- [Clio](#)
- [European Patent Office](#)
- [Martindale Hubbell directory](#)

[Here's a larger list of legal API's](#)

What kinds of data are good to get from APIs?

Anything that can use data to convey meaning that should be updated in real time: Twitter, Facebook, Amazon, Google, Foursquare all make their information available this way.



Some disadvantages with a web API:

- Data is enclosed in a proprietary database perpetuating data silos
- Developers must know an API exists and decide what to access based on available parameters
- Links between different data sources must be explicitly created
- Data is not included in the global database, i.e. “*on the web*” but not “*of the web*”

API advantages

- Generally directly plugged directly into the live information source
- Requiring keys and accounts allows control of access
- There is generally commitment on part of API supplier to keep service stable
- Designed to support development (or at least the best ones are)

Open data / Linked data / APIs compared

- Linked data is openly available on the web and requires no knowledge of the particular source to find
(*once the user knows how to find linked data)
- Open data is more often published in static files that require the user to go to the source and download a new version if they are updated at all

Open data / Linked data / APIs compared, cont.

- APIs are generally updated regularly, but they require the applications built on them to actively update their content from the source

(There is “open linked data” which resolves some of these issues)

Copyright and licensing issues

- In order to be “open” data is supposed to be free of licensing and copyright restrictions
- Many developers refrain from using many linked datasets and APIs for intellectual property / licensing reasons

Questions?

Discussion / breakout sessions

What interests you?

What's unresolved?

**In case of emergency break
glass . . .**

Suggested topics for breakout groups

- Push toward openness of new technologies and tension with need for confidentiality
- New cataloguing standards and implications over time of not adhering to them
- Uses for APIs
- Implications for resource discovery
- Open (and other) data and how to integrate it into practice
- Should we all learn to code? - what skills do we need to make use of new technologies and what would we want to do with them?
- Linked data projects – why would we want to do them and what would we want to do next.

Coming Back Together

Moving forward --

Where do we go from here?